

COUNTRY ANALYSIS BRIEFS

Kuwait

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Background

Kuwait is a major world oil exporter.

Kuwait is one of the world's top exporters of oil, with about 2.4 million barrels per day exported in 2008. Kuwait's economy is heavily dependent on [oil export revenues](#) which account for roughly 90 percent of total export earnings. Kuwait channels around 10 percent of its oil revenues into the "Future Generations Fund" for the day when oil income runs out.



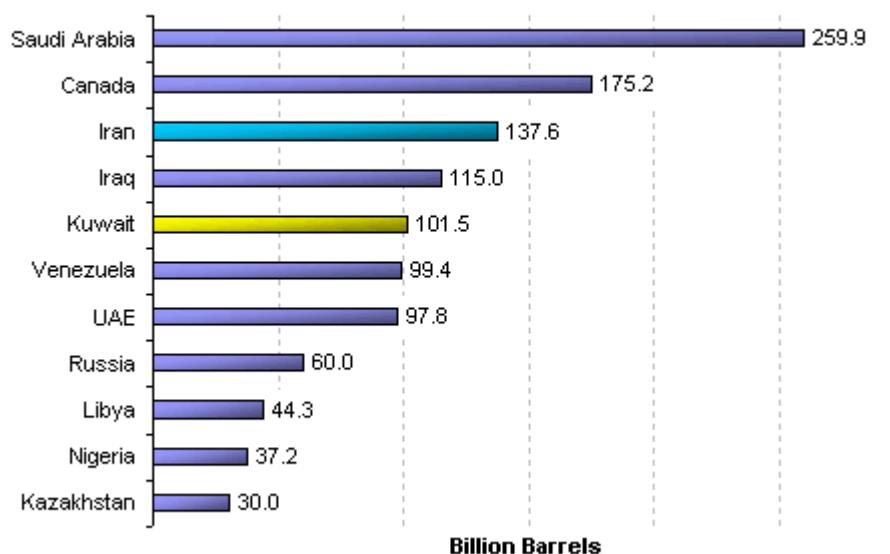
The Kuwaiti constitution forbids foreign ownership of Kuwait's mineral resources. The Kuwaiti Parliament passed the "Foreign Direct Investment Act" in 2001, aimed at promoting foreign investment in Kuwait's oil and gas sectors, which facilitated some development in those sectors. However, major projects such as Project Kuwait remain at a standstill due to disagreements between Parliament and the ruling Al-Sabah family.

Oil

Kuwait is OPEC's fourth-largest crude oil producer.

According to *Oil and Gas Journal*, as of January 2010 Kuwait's territorial boundaries contained an estimated 101.5 billion barrels (bbl) of proven oil reserves, roughly 8 percent of the world total. The [Partitioned Neutral Zone](#) (a.k.a. Divided Zone, Neutral Zone), which Kuwait shares 50-50 with [Saudi Arabia](#), holds an additional 5 billion bbl of reserves, bringing Kuwait's total oil reserves to 104 billion bbl. Click [here](#) for a map of major oil fields from Kuwait's Ministry of Oil.

Top Proven World Oil Reserves, January 1, 2010



Overview

The Supreme Petroleum Council oversees Kuwait's oil sector and sets oil policy. The Kuwait Petroleum Council (KPC) manages domestic and foreign oil investments. KOC, nationalized in 1979, is KPC's upstream arm in Kuwait. The Kuwait Gulf Oil Company (KGOC), set up in 2002, oversees the bulk of Kuwait's interests in the Neutral Zone. Most Kuwaiti crude oil is sold on term contracts, with the price of Kuwaiti crude oil tied to Saudi Arabian Medium (for western customers) and a monthly average of Dubai and Oman crudes (for Asian buyers).

Most of Kuwait's oil reserves are located south of Kuwait City. The 70-billion bbl Greater Burgan area, which comprises the Burgan, Magwa and Ahmadi fields, is widely considered the world's second largest oil field, surpassed only by Saudi Arabia's Ghawar field. Producing oil since the 1950's, Greater Burgan generally produces lighter crudes with API's in the 28°-36° range, and has a production capacity of 1.6 million bbl/d. The South Magwa field (discovered in 1984) is estimated to hold at least 25 billion bbl of light crude.

Other fields surrounding the Greater Burgan area include Umm Gudair, Minagish, and Abdaliya. Umm Gudair and Minagish produce heavier crude oil, with gravities in the 22°-26° API range, and have a combined production capacity of 200,000 bbl per day. In January 2003, water injection began at Minagish to enhance oil recovery and offset natural declines in production.

Northern Kuwait holds the majority of Kuwait's larger fields after Greater Burgan. Kuwait's second largest field, Raudhatain, was discovered in 1955 by KOC, and has 9.55 billion bbl of proven and probable recoverable oil. Raudhatain has the capacity to produce 450,000 bbl of oil per day.

Partitioned Neutral Zone

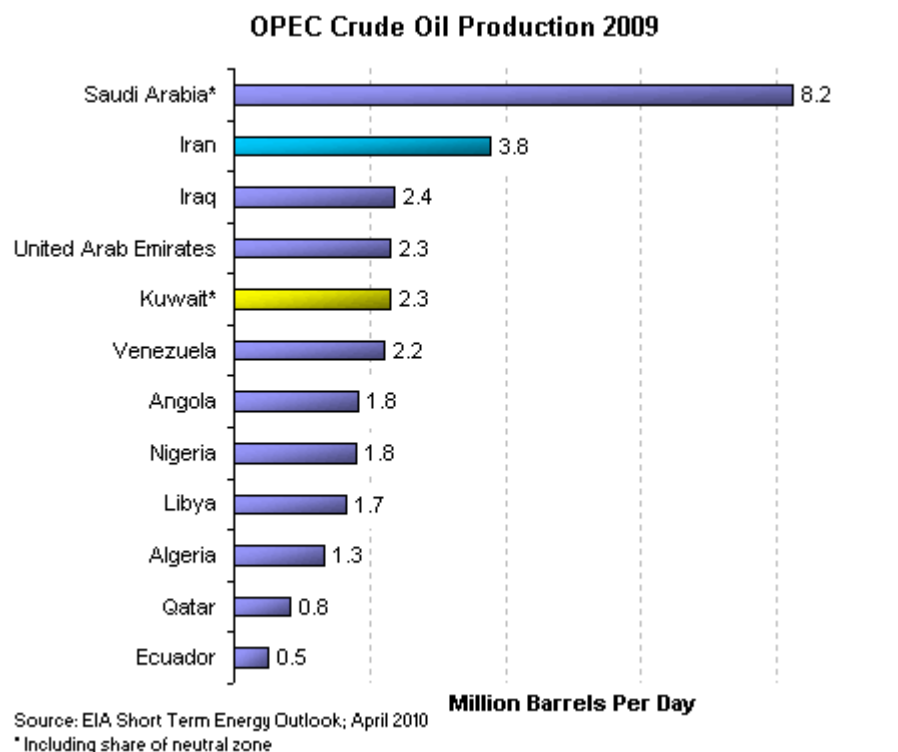
The Partitioned Neutral Zone (PNZ) was established in 1922 to settle a territorial dispute between Kuwait and Saudi Arabia. The PNZ encompasses a 6,200 square-mile area and contains an estimated 5 billion bbl of oil and 1 trillion cubic feet (Tcf) of natural gas. A Joint Operations Committee, with representatives from both Kuwait and Saudi Arabia, manages the resources in the PNZ. Kuwait is represented by the Wafra Joint Operations Group, and Saudi Arabia is represented by Chevron. Oil production capacity in the PNZ is currently about 600,000 barrels per day, all of which is divided equally between Saudi Arabia and Kuwait.

Onshore production in the PNZ centers on Wafra. On stream since 1954, Wafra is the largest of the PNZ's onshore fields with approximately 3.4 billion in proven and probable reserves. Wafra has related production facilities and gathering centers with South Umm Gudair and South Fuwaris. Onshore production in the PNZ has a capacity of around 274,000 bbl/d.

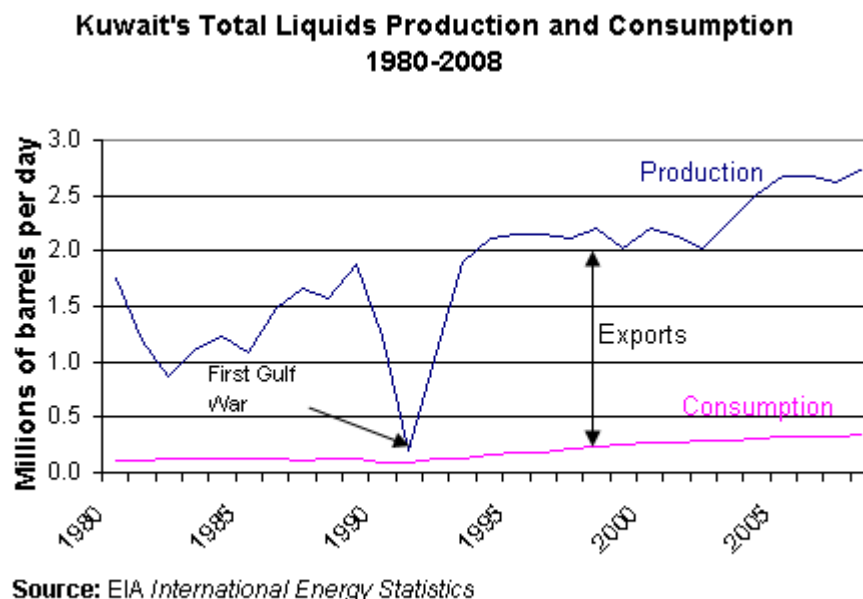
The production capacity of offshore fields in the PNZ is 300,000 bbl/d, with almost 90 percent coming from Khafji. Offshore production is about four times as expensive in the PNZ as in the rest of Kuwait. Khafji, an extension of Saudi Arabia's Safaniyah (the world's largest offshore field), Hout, also an extension of Safaniyah, and Dorra, an extension of Iran's Arash, are the largest fields. Dorra is not currently under production pending resolution of boundary demarcation negotiations between Kuwait and [Iran](#).

Production & Consumption

In 2009, Kuwait's total oil production approximated 2.5 million barrels per day (bbl/d), including approximately 300,000 bbl/d production from the PNZ; 2008 total oil production was roughly 2.7 million bbl/d (PNZ production roughly the same). Of 2009 production, 2.3 million bbl/d was crude and approximately 200,000 bbl/d was non-crude liquids. Overall, around two-thirds of Kuwaiti oil production comes from the southeast of the country. Kuwait's total oil consumption equaled roughly 350,000 bbl/d in 2008.



Most of Kuwait's major producing fields are over sixty years old, and therefore field maturity is becoming a concern. In 2005, KOC, citing field exhaustion, lowered its production plateau estimates for the Greater Burgan area from 2 million bbl/d to 1.7 million bbl/d over a 20-30 year period. This issue places added significance on development of other Kuwaiti reserves going forward.



Developments

Kuwait plans to increase crude oil production capacity from its current 2.6 million bbl/d to 4 million bbl/d by 2020, largely via Project Kuwait (PK). Progress towards enacting PK, however, remains caught in the disagreement between Parliament and the ruling family on how best to proceed.

Kuwait's constitution - and longtime policy - bars foreign investment in the country's natural resources, except as provided for by law. In order to allow IOC involvement, "incentivized buy-back contract" (IBBC) arrangements, which do not involve production sharing, concessions, or the "booking" of reserves by foreign companies, have been created. The structure of the IBBC agreements allows the Kuwaiti government to retain full ownership of oil reserves, control over oil production levels, and strategic management of the ventures. Foreign firms are to be paid a "per barrel" fee, along with allowances for capital recovery and incentive fees for increasing reserves, in their role as service provider/contractor. In May 2007, the Kuwaiti ruling family conceded the responsibility to approve each related IBBC for Project Kuwait to Parliament.

PK aims to increase the country's oil production capacity from four northern oil fields – Raudhatain, Sabriya, Ratqa, and Abdali - to 3.5 million bbl/d by 2015, and then 4 million bbl/d by 2020 with the help of international oil companies (IOC). Heavy oil is a major component of Kuwait's increased production capacity plans. Estimated heavy oil reserves of approximately 13 billion bbl are located primarily in the north of Kuwait.

KOC also plans to drill for oil in South East Kuwait and West Kuwait. In South East Kuwait, which holds the vast Burgan field, production is to increase by 200,000 b/d to a total of 1.7 million bbl/d; KOC hopes to maintain capacity in West Kuwait at 500,000 b/d.

Kuwait is expected to increase its crude oil production capacity by approximately 170,000 bbl/d in 2011 with Gathering Center (GC) 24 in the Sabriya oil field. Western Kuwait's GC-16 is expected to add another 100,000 bbl/d in production capacity, but its startup date is uncertain.

Exports

Kuwait exports the majority of its crude and refined products to the Asia-Pacific region.

In 2008, Kuwait's total exports of crude oil and refined products reached nearly 2.4 million bbl/d. The Asia-Pacific region received approximately 1.5 million bbl/d, the United States received approximately 210,000 bbl/d, and Western Europe received 180,000 bbl/d. Kuwait's single export blend ("Kuwait Export") has a specific gravity of 31.4°API (a typical medium Mideast crude), and is considered sour with 2.52 percent sulfur content.

Top Kuwaiti Petroleum Export Destinations, 2008	
Country	Mbbl/d
Japan	430
South Korea	390
India	270
United States	210
Taiwan	180
Singapore	150
China	120
Other	630
Total Exports:	2,400

Source: Global Trade Atlas; FACTS; EIA

Mina al-Ahmadi is the country's main port for the export of crude oil. Kuwait also has operational oil export terminals at Mina Abdullah, Shuaiba, and at Mina Saud. To handle increased production generated by Project Kuwait, a new terminal is planned for construction on Bubiyan Island.

Downstream

Kuwait's three domestic refineries have a combined capacity of roughly 936,000 bbl/d. The country's largest refinery is Mina al-Ahmadi, with capacity of 466,000 bbl/d, followed by Mina Abdullah (270,000 bbl/d) and Shuaiba (200,000 bbl/d).

Kuwait Petroleum International (KPI; a.k.a. "Q8") manages KPC's refining and marketing operations internationally, with approximately 4,000 retail stations across Western Europe (Belgium, Spain, Sweden, Luxembourg, and Italy). KPI owns an 80,000 bbl/d refinery in Rotterdam, Netherlands and has a 50:50 joint venture with AGIP in the 240,000 bbl/d capacity refinery in Milazzo, Italy.

With the growth of downstream markets in Asia, Kuwait is interested in acquiring downstream assets in large emerging markets such as [China](#). In China's Guangdong Province, KPC is negotiating a partnership with China's Sinopec and Dow Chemical Company. The plant will feature a 300,000 bbl/d capacity refinery and a 1 million tons per year ethylene steam cracker.

Clean Fuels Project

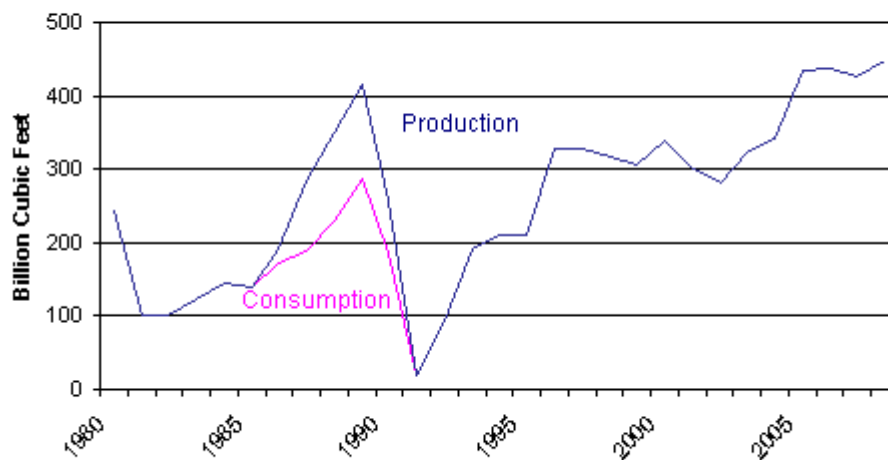
The Clean Fuels Project (CFP) is the umbrella under which Kuwait's existing refineries will be upgraded. With a 2008 price tag of \$18 billion, the CFP is split into three packages. In Package 1, Mina Abdullah's distillation capacity will be increased to 420,000 bbl/d. Package 2 will consist of revamping Mina Abdullah's utilities both on and offsite. Package 3 will restore and repair necessary elements of Mina Al-Ahmadi.

Natural Gas

According to *Oil and Gas Journal*, in January 2010 Kuwait's estimated natural gas reserves stood at nearly 63 trillion cubic feet (Tcf). Kuwait produces a relatively modest volume of dry natural gas, approximately 449 billion cf (Bcf) in 2008, the vast majority of which is "associated gas" (i.e., found and produced in conjunction with oil).

Kuwait holds a modest amount of natural gas reserves but hopes to significantly increase its use of domestic and imported natural gas in electricity generation and other sectors to free up additional oil for export.

Kuwaiti Dry Natural Gas Production and Consumption 1980-2008



Source: EIA, *International Energy Statistics*

Production

Kuwait seeks to significantly increase its use of natural gas in electricity generation, water desalination, and petrochemicals to free up as much as 100,000 barrels per day of oil for export. Kuwait hopes to accomplish this through increased drilling for natural gas, and tying together gathering centers to create the infrastructure necessary to reduce associated gas flaring.

In 2005, an estimated 35 Tcf of non-associated gas was discovered in several fields near Sabriya and Umm Niga in northern Kuwait. In the summer of 2008, Kuwait began production of approximately 175 million cf per day, planned to rise to nearly 1 Bcf per day by 2015. The new production is not expected to offset Kuwait's rising demand.

As with oil, negotiations continue between Kuwait and [Iran](#) regarding the disputed Dorra offshore natural gas field and any development requires resolution of demarcation issues. The Dorra field has been claimed by [Saudi Arabia](#), Kuwait, and Iran, and may contain up to 11 Tcf of recoverable natural gas reserves. It is not currently in production.

Consumption & Imports

In 2008, Kuwait consumed approximately 449 Bcf of natural gas. Although on an annual basis natural gas consumption matches production, in recent years, Kuwait's electricity demand, the generation of which is fueled by natural gas, has outpaced natural gas production during the summer months, resulting in the shutdown of refinery and petrochemical operations to meet the increased demand in electricity.

To mitigate the demand shortage, in June 2009 Kuwait signed a deal with Shell to import liquefied natural gas (LNG), receiving the first cargo in August 2009. Kuwait took delivery of the LNG at the Persian Gulf's first regasification terminal, Mina al-Ahmadi GasPort. Mina al-Ahmadi's regasification capacity is approximately 10,300 tonnes of LNG per day (500 million cubic feet per day). In addition to the contract with Shell, Kuwait takes on spot cargoes as needed.

Kuwait and Qatar continue to explore options by which Qatar might supply Kuwait with LNG cargoes. Besides Qatar, Kuwait seeks to import natural gas from Iran, most likely from its huge South Pars gas field. Iran and Kuwait signed a preliminary memorandum of understanding for natural gas sales in March 2005, but commerce requires the resolution of maritime border issues in the region, specifically with regards to Dorra.

Profile

Energy Overview

Proven Oil Reserves (January 1, 2010E)	104 billion barrels (includes half of Neutral Zone)
Oil Production (2009)	2.5 million barrels per day, of which 2.3 million was crude.
Oil Consumption (2008)	350 thousand barrels per day
Crude Oil Distillation Capacity (2008)	936 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2010E)	63 trillion cubic feet
Natural Gas Production (2008)	.449 trillion cubic feet
Natural Gas Consumption (2008)	.449 trillion cubic feet
Recoverable Coal Reserves (2010E)	None
Coal Production (2010E)	None
Coal Consumption (2010E)	None
Electricity Installed Capacity (2007)	10.855 gigawatts
Electricity Production (2007)	45.828 billion kilowatt hours
Electricity Consumption (2007)	40.209 billion kilowatt hours
Total Energy Consumption (2007)	1.156 quadrillion Btus*, of which Oil (61%), Natural Gas (39%), Coal (0%), Nuclear (0%), Hydroelectricity (0%), Other Renewables (0%)
Total Per Capita Energy Consumption (2006)	469.8 million Btus
Energy Intensity (2006)	10,240 Btu per \$2000-PPP**

Oil and Gas Industry

Organization	The Supreme Petroleum Council governs the nationalized oil industry, which is run by Kuwait Petroleum Corporation (KPC). KPC subsidiaries include: Kuwait Oil Company (KOC) - exploration and production of oil and gas; Kuwait National Petroleum Company (KNPC) - refining and shipping; Kuwait Petroleum International (KPI) - refining and product marketing; Petrochemical Industries Company (PIC) - production and marketing of chemical products; Kuwait Foreign Petroleum Exploration Company (KUFPEC) - foreign exploration; and Kuwait Oil Tanker Corporation (KOTC) - tanker operations.
Major Oil Terminals	Mina Al-Ahmadi, Mina Abdullah, Shuaiba, Mina Saud
Foreign Company Involvement	BP, Chevron, Total, ExxonMobil, Shell, Arabian Oil Company, Parsons Corp., Fluor Corp.
Major Oil Fields (reserves, billion barrels)	Greater Burgan -- Burgan, Magwa, and Ahmadi (70); Raudhatain (9.55); Sabriya; Minagish; Abdali; Rugei; Bahra; Neutral Zone: Wafra (3.4); Al-Hout; Khafji; South Fawaris

Major Pipelines (capacity, Mmcf/d) Raudhatain-Ahmadi; Minagish-Ahmadi; Umm Gudair-Shuaiba; Wafra-Mina Abdullah; Burgan-Ahmadi

Major Refineries (capacity, bbl/d) Mina Al-Ahmadi (466,000), Mina Abdullah (270,000), Shuaiba (200,000)

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power.

**GDP figures from Global Insight estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

[EIA - Kuwait Country Energy Profile](#)

U.S. Government

[CIA World Factbook - Kuwait](#)

[U.S. State Department Consular Information Sheet - Kuwait](#)

[Kuwait-Info.com](#)

[AME Info Middle East Business Information](#)

[Persian Gulf War Chronology](#)

Oil and Natural Gas

[Kuwait Gulf Oil Company](#)

[Kuwait Oil Company](#)

[Oil Magazine](#)

[OPEC](#)

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Energy Information Administration

FACTS, Inc

Financial Times

Global Insight

International Oil Daily

Kuwait Petroleum International

Kuwait Times

Kuwaiti Foreign Petroleum Exploration Company

Kuwaiti News Agency

Lloyd's List

Middle East and Africa Oil and Gas Insights

Middle East Economic Digest

Middle East Economic Survey

Oil and Gas Journal

OPEC

Petroleum Economist

Petroleum Intelligence Weekly

Platts Energy Economist

Saudi Gazette

Stratfor.com

U.S. Energy Information Administration

World Gas Intelligence

World Markets Online

World Oil

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